

BUSINESS EDUCATION FRAMEWORKS

Business Mathematics

Course Code	Course Name/Description	Grade Levels	Accreditation Time/Credit Options
14050	Business Mathematics - is a course designed to improve computational skills and applications that are part of any business environment. The content includes mathematical operations related to accounting, banking and finance, and personal financial management. Note: This course can be taught for Business Education credit only.	9-12	½ or 1
Topic	Standards		
<ul style="list-style-type: none"> Payroll 	5.6.3.3 Calculate gross earnings (e.g. salary, hourly rate, commission, per diem, tips, or production) 5.6.3.4 Calculate payroll withholdings (e.g. employee income tax, Social Security, Medicare), other deductions, and net earnings		
<ul style="list-style-type: none"> Taxes 	5.6.1.2 Compute personal, state, and federal income taxes 5.6.1.3 Calculate property tax, assessed value, or the tax rate when one of the three variables is unknown		
<ul style="list-style-type: none"> Checking 	5.6.4.8 Maintain electronic bank records 6.15.1.7 Describe and use the steps involved in the banking reconciliation process 6.15.1.8 Compare and contrast various forms of endorsement 6.15.1.9 Recognize the costs associated with services offered by financial deposit institutions (e.g.		

	<p>overdrafts and stop-payment orders)</p> <p>6.15.1.10 Identify other means of transferring funds (e.g. money orders and certified checks)</p> <p>6.15.1.11 Compare costs and benefits of online and traditional banking</p>
<ul style="list-style-type: none"> • Savings/Investing 	<p>5.6.2.3 Calculate the purchase price of a stock transaction</p> <p>5.6.2.4 Calculate compound interest and the resulting compound amount at the maturity date for savings and investments</p> <p>5.6.2.5 Use compound interest calculators (including Internet calculators) to compute compound interest and compound amounts</p> <p>5.6.2.6 Calculate the price of a bond, stock or mutual fund given a recent quotation</p> <p>5.6.2.7 Calculate and compare the rates of return for various instruments to make decisions</p> <p>5.6.2.13 Calculate pension income from Social Security, company or union plans, or retirements accounts</p> <p>6.13.1.9 Apply criteria for choosing a savings or investment instrument (e.g. market risk, inflation risk, interest rate risk, liquidity, and minimum amount needed for investment)</p> <p>6.13.1.11 Explain why a savings and investing plan changes as one proceeds through the life cycle</p> <p>6.13.1.12 Differentiate among interest, dividends, capital gains, and rent from property</p> <p>6.13.1.13 Describe how saving and investing influence economic growth (e.g. capital formation)</p> <p>6.13.1.14 Evaluate tax incentives available for certain investments</p>

	6.13.1.15 Explain costs and income sources for investments
• Credit	<p>5.6.6.1 Using the simple interest equation ($I=PRT$), solve for one of the variables and find maturity value, maturity date, and days between dates</p> <p>5.6.6.3 Calculate the outstanding amount for installment purchases</p> <p>5.6.6.4 Calculate finance/additional charges, periodic payment, total cost, and APR on an installment contract</p> <p>5.6.6.5 Compare cash price to installment price in order to make a purchasing decision</p> <p>5.6.6.6 Calculate present value of a simple interest loan</p> <p>5.6.6.7 Calculate the effects of early payoff of an installment plan</p> <p>5.6.6.10 Calculate finance charges on credit card balances and cash advances</p>
• Loans	<p>6.16.1.22 Calculate a payment schedule for a loan</p> <p>10.10.2.1 Identify sources of financing</p>
• Interest	<p>5.6.2.4 Calculate compound interest and the resulting compound amount at the maturity date for savings and investments</p> <p>5.6.2.5 Use compound interest calculators (including Internet calculators) to compute compound interest and compound amounts</p> <p>5.6.2.8 Calculate the amount, compound interest, and present value for a simple annuity</p>
• Depreciation	<p>5.6.10.1 Calculate the depletion of natural resources</p> <p>5.6.10.2 Calculate book value</p> <p>5.6.10.3 Calculate average annual depreciation</p>

	<p>5.6.10.4 Calculate the rate of depreciation</p> <p>5.6.10.6 Calculate the annual and accumulated depreciation or cost recovery of plant assets (e.g. straight-line, declining balance, sum of the year's digits, Accelerated Cost Recovery System (ACRS) and IRS methods)</p>
<ul style="list-style-type: none"> • Mortgages 	<p>5.6.6.11 Calculate a down payment, closing costs, and mortgage loan amount</p> <p>5.6.6.12 Calculate the interest saved by early mortgage repayment or shorter mortgage terms</p> <p>5.6.6.13 Calculate the savings from refinancing a mortgage</p> <p>5.6.6.14 Calculate installment loans, mortgages, mortgage refinancing, and loan prepayment rates</p>
<ul style="list-style-type: none"> • Installment Purchases 	<p>5.6.6.2 Calculate the outstanding amount for installment purchases</p> <p>5.6.6.4 Calculate finance/additional charges, periodic payment, total cost, and APR on an installment contract</p> <p>5.6.6.5 Compare cash price to installment price in order to make a purchasing decision</p> <p>5.6.6.6 Calculate present value of a simple interest loan</p> <p>5.6.6.7 Calculate the effects of early payoff of an installment plan</p>
<ul style="list-style-type: none"> • Insurance 	<p>5.6.13.1 Calculate benefits, claims, and premiums on real estate, health, disability, life, fire, and auto insurance</p> <p>5.6.13.2 Compare costs of insurance coverage with different options (term versus whole life and HMO versus indemnity plans)</p> <p>5.6.13.3 Calculate premiums for multiple carrier insurance</p>

	<p>6.17.1.7 Identify the type of insurance associated with different types of risk (e.g. automobile, personal and professional liability, home and apartment, health, life, long-term care, disability)</p> <p>6.17.1.8 Explain why insurance needs change throughout the life cycle</p> <p>6.17.1.9 Identify various suppliers of insurance (e.g. public and private)</p>
<ul style="list-style-type: none"> • Budgeting 	<p>6.12.1.7 Compare a personal spending plan with typical consumer spending as a tool for determining individual financial goals</p>
<ul style="list-style-type: none"> • Sales 	<p>5.6.8.4 Calculate net sales with sales/returns allowance and sales discount</p> <p>5.6.8.5 Calculate the percent of markup when based on the cost or when based on the selling price</p> <p>5.6.8.6 Calculate the percent of markdown given the regular selling price and the reduced price</p> <p>5.6.8.7 Calculate sales projections and market share</p>